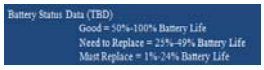
Avedro
FGSH07-AVO-01 / FGPCBA-AVO-01
Remote Operational Behavior - Rev3
2020-02-24

A : Remote Control Operational Behavior

1. Battery Status and Voltage Levels :



- Input rated : DC 3 V (Battery)
1) LEVEL-A : Good : 2.7V~
2) LEVEL-B : Need to replace : 2.5~2.7V
3) LEVEL-C : Must replace : under 2.5V : Will not Sync at this level. Remote will continue to transmit, if paired, until batteries are drained.

2. Installing New Batteries:

2-1) If new batteries are installed, the remote will remain in standby mode until any directional button is pressed and the remote control will SYNC to host.

2-2) REGISTRATION OF REMOTE : After the remote is SYNC with the receiver, it will register with the receiver.
After a remote is registered, no other remotes can SYNC with the host.

2-3) If the batteries are replaced (under any condition), the remote should manually re-SYNC to the receiver.

3. Battery Button:

When the Battery Button is pressed to check the battery status, the following behavior is expected:
Remote will not attempt to SYNC with host.

3-1) Remote not SYNC with host.

If the Battery button is pressed before the remote is SYNC with host:

3-1-1) LEVEL-A : While checking battery status (Blue LED)

Blue battery LED will stay ON for 5 seconds and then turn off

3-1-2) LEVEL-B : While checking the battery status (Yellow LED)

Amber battery LED will stay ON for 5 seconds and then turn off

3-1-3) LEVEL-C :

The Amber LED will blink on/off (1Hz) for 5 seconds and then turn off. Remote will *not* attempt to SYNC with host.

3-1-4) If any directional button is pressed while the battery level is at Level C, the battery button amber LED will blink for 5 seconds and then turn OFF. Remote will not attempt to SYNC with host.

3-2) Remote SYNC with host.

These behaviors will repeat until batteries are drained or procedure is completed.
3-2-1) If the Battery button is pressed after the remote is SYNC with host:
- LEVEL-A : Battery Button blue LED turns ON for 5 seconds and then turns OFF
- LEVEL-B : Battery button amber LED turn ON and shall remain on until sync is lost or system User Interface breaks sync at completion of a treatment session.
- LEVEL-C : Battery button amber LED will blink for 5 seconds and then turn OFF. The remote will continue to transmit, if paired, until batteries are drained.

3-2-2) The remote should automatically indicate the change from battery Level A to Level B or Level B to Level C.
- LEVEL-B : If battery level drops to Level B DURING a procedure, the battery button amber LED will turn ON and remain ON until SYNC with host is lost.
- LEVEL-C : If battery level drops to Level C DURING a procedure, the battery button amber LED will blink for 5 seconds and then turn OFF. The remote will continue to transmit, if paired, until batteries are drained

4. SYNC Workflow:

If any directional button is pressed one time, the remote will SYNC with receiver, as per behavior below:
(Refer to battery level information above)

4-1) Sync Start


When the remote starts to SYNC, the Blue LED Light Ring will blink in a clockwise pattern at 1 Hz/revolution to indicate SYNC ON.

4-2) Sync Success


When the remote pairs to the receiver, the Blue LED Light Ring will remain ON.

4-3) Sync Fail


If the remote fails to SYNC after 20 seconds, the Amber LED Light Ring will turn ON for 20 seconds and then turn OFF
--> The remote control will have the same same behavior as 6-1

If the Battery button is pressed during the SYNC fail behavior, the button will function normally, as described above in section 3.
(Check Battery Level and SYNC)

For example: If the receiver is not powered on or some other issue, the remote will be unable to SYNC.
Once power is restored to the receiver or other issue is resolved, the remote will be able to SYNC as expected.

5. Sync Lost:

Factors that can cause loss of SYNC between remote and receiver
6-1) Power OFF on RX
6-2) Low battery level on remote control.
6-3) Communication between remote and receiver interrupted by distance, interference or other factors.
6-4) RX intentionally losing SYNC when procedure is completed (Power OFF to RX).

[Sync Lost - Operational Summary]

6-1) If the SYNC is lost, the LED Light Ring will change from Blue to Amber to indicate SYNC Lost status. The Amber LED in the Light Ring will remain ON for 20 seconds and then turn OFF.

6-2) If the battery voltage levels drop, the Amber LED of the Battery button will have the following behavior:
If the battery voltage moves to Level C, the remote continue to transmit until batteries are dead.

6-3) If the batteries are replaced (under any condition), the remote should manually re-SYNC to the receiver.

6-3) If the remote control is unable to SYNC with receiver (distance or interference):
a) If the SYNC is lost, the LED Light Ring will change from Blue to Amber to indicate SYNC Lost status. The Amber LED in the Light Ring will remain on for 20 seconds and then turn off.
b) The remote will continue to automatically re-SYNC for 20 seconds and then timeout.

6-4) When finished using the remote control:
1) If the receiver is powered OFF, the remote control will use the same behavior as 6-1

B: Receiver Module Behavior

1) Add Blue and Amber feedback LED on receiver module.
2) If the receiver is SYNC with remote, the Blue LED will remain on. If the receiver is not SYNC with remote, the Amber LED will remain ON.
3) If the receiver loses SYNC, the Amber LED will remain on.
4) Both LED's will turn off then the power to the receiver is disconnected.
5) When the power to the receiver is cycled, the receiver will only connect to the transmitter after receiving the Initiaization code from host.
6) The receiver will connect to the transmitter after receiving an initiialization command from the host, but will automatically Re-Sync to remote control during the 20 second reconnect period after Sync is lost. (Refer to 6-3)
7) The receiver will connect to the transmitter, after receiving the Initiaization command from the host, when any direction button button is pressed on the transmitter and after the 20 second reconnect period after the Sync is los

FCC compliance notice

FCC ID = 2AVGK-KXLTX

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Any changes or modifications to this device not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.